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Pests of Trees and Shrubs: Gall Formers and Sucking Insects

Cooperative Extension South Dakota State University

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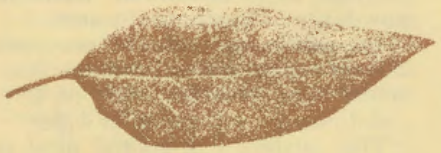
FS 647

Pests of Trees and Shrubs

Gall Formers and Sucking Insects

Cooperative Extension Service
U. S. Department of Agriculture
South Dakota State University

Gall Formers and Sucking Insects



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Trees and shrubs, because they add so much value and beauty to our yards, should be protected from the ravages that insects can inflict on them. This fact sheet describes the more common insects that suck on plant juices and those insects that cause the odd growths known as galls. A companion fact sheet (FS 648) describes common leaf chewers. FS 649 treats insects attacking stems, branches, and trunks.

If there's a pest on your trees not covered in these fact sheets, talk to your county Extension agent or contact the authors at SDSU for identification and control recommendations.

Sucking Insects

Aphids or Plant Lice

Appearance. Aphids are soft-bodied insects with color varying from greens, reds, and yellows to blacks. Seldom do they ever get larger than ⅛ inch long.

Woolly aphids are often not noticed because of the dense, cotton-like masses which cover their bodies. Trees infested with woolly aphids have what look like masses of cotton on leaves, twigs, and branches.

Type of damage. Heavier infestations on plants cause distorted or curled leaves. Many aphids secrete an objectionable liquid, or honey-dew. This honey-dew is particularly noticeable on elm trees during summer; often the trees appear to be "weeping." Dark molds, known as sooty molds, often accompany the honey-dew on the leaves.

Plants attacked. Nearly all plants are subject to attack by aphids.

Leafhoppers

Appearance. Leafhoppers are small but very active insects, usually greenish to brownish. Immature leafhoppers (nymphs) run rapidly sideways on the leaves when disturbed.

Type of damage. These pests feed on the undersides of leaves, causing them to turn yellow or brown and dry up.

Damage often will appear first on leaf margins and then extend to the midrib.

Plants attacked. Nearly all plants are subject to attack by leafhoppers.

Scales

Appearance. Scales (on twigs, branches, and trunks) vary greatly in appearance. All give a "crusted" look to the affected plant portions. Many times the color of the scales blends so well into the color of the twigs or branches that only a close inspection will reveal their presence. The actual insects are underneath the scales which protect them. Some scales, such as pine needle scale, attack the needles of coniferous trees.

Type of damage. Heavier infestations of scales cause leaves to turn yellowish or reddish; eventually, tree branches may die. The bark often cracks, appearing to dry up while on the branches.

Plants attacked. Oystershell Scale: ash, poplar, elm, lilac, maple, rose, apple, and many other shade trees and ornamental plants. San Jose Scale: apple, crab, hawthorn. Scurfy Scale: elm, ash, aspen, maple, willow, and cottonwood. European Elm Scale: elm. Pine Needle Scale: pine, spruce, and occasionally firs.

Fig. 1. Aphid or plant louse: (a) wingless form, (b) winged form.

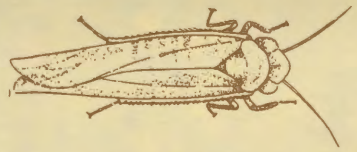

Fig. 2. Leafhopper.

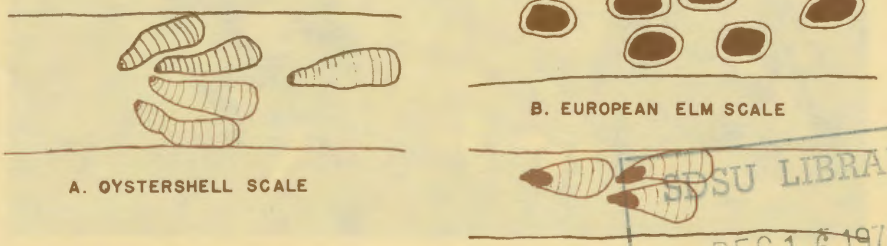

Fig. 3. Some common scales.

Fig. 4. Pine needle scale.

Lace Bugs

Appearance. These insects are small, approximately ⅛ inch long, and usually are gray, brown, or black. The wings have a lace-like pattern, the reason for the insect's common name.

Type of damage. Lace bugs feed on the undersides of leaves, sucking sap. Where heavy feeding occurs, leaves appear stippled, pale yellow, or bleached. Often the undersides are spotted with a dark, gummy material.

Plants attacked. Oak, sycamore, rhododendron, hawthorn, azalea.

Spider Mites

Appearance. Spider mites are very small and difficult to see without a magnifying lens. They appear as tiny moving specks on the undersides of leaves. When infestations are severe, parts of the plants may become covered with webbing spun by the mites.

Type of damage. Leaves develop a yellowed, speckled color and in severe cases may appear bronzed or rusty. Spider mites develop very rapidly and produce many generations during the warmer periods of summer.

Plants attacked. Nearly all plants.

Fig. 5. Lace bugs.

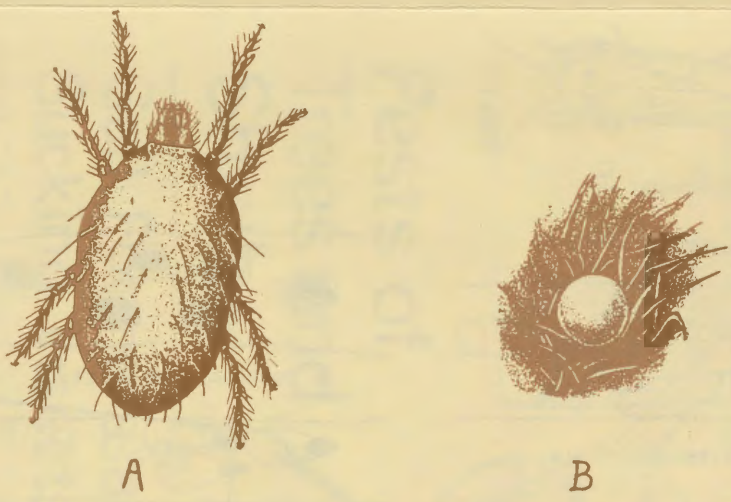

Fig. 6. Spider mite: (a) mite, (b) egg.

Control of Sucking Insects

Sprays

Aphids, leafhoppers, and lace bugs can be controlled by using an "all purpose" spray mixed by adding 2 pounds 50% methoxychlor and 4 pounds 25% malathion wettable powder to 100 gallons of water.

For smaller quantities of spray, mix 2 level tablespoons of 50% methoxychlor and 4 tablespoons of 25% malathion to each gallon of water.

This mixture will control most of the leaf-feeding insects. Wettable powders are less likely to injure foliage than emulsion sprays. Spruce trees are especially sensitive to oils, and injury frequently occurs.

Other insecticides recommended for control of sucking insects include malathion and Cygon. Use these insecticides according to label directions.

The various scales are difficult to control by insecticides when they are inside their protective covering. Dormant oil sprays may be applied to the plants before buds open in the spring. A number of oil preparations are available for this purpose. Follow the manufacturer's directions and precautions for best results.

Scales can be controlled when the young stages or "crawlers" leave the old scale to move to a new location. The timing of this spray is important. A way to judge the time correctly is to cut off a portion of the infested twig early in the spring and place in a container, such as a bottle. Leave the container outdoors and check regularly for any sign of life. As soon as activity is noted, spray with any of the insecticides mentioned.

Where spider mite problems develop, a spray of malathion or Cygon may be used. There are also a number of good acaricides or miticides such as: Genite, Kelthane, Tedion, Chlorobenzilate, Dimite, Aramite, and others. Use as directed on the label for the trees or shrubs involved.

Systemic Insecticides

Systemic insecticides are absorbed through the leaves or roots and translocated throughout the plant, making the plant poisonous to insects. They are used primarily for sucking insects such as aphids, scales, leafhoppers, and mites. Among those available to the home gardener are Meta-Systox, Cygon (Dimethoate) and Di-Syston.

Di-Syston is used as granules applied to the soil. Di-Syston and Meta-Systox are highly toxic insecticides, so use them with caution. **Some plants may be injured by systemics,** so make sure you carefully read the label before using these systemic products.

Other systemic insecticides available for use by commercial applicators or nurserymen are Temik and Thimet.

Gall Producers

Some insects and mites, their near relatives, produce gall formations on trees and shrubs. Some galls may be very striking, while others are less conspicuous. The insect or mite lives inside the gall.

Galls may be found on leaves, stems, twigs, branches, and trunks. Galls are formed by substances produced by the mite or insect which cause the living cells to grow abnormally. Damage by gall formers is difficult to determine. Many gall producers lack importance from an economic standpoint.

Authorities estimate 1,500 kinds or species of gall producers attack plants. Only a few of the common types are included in this fact sheet.

Leaf-stem Galls

Appearance. Galls appear as an enlargement on the leaf stem of the tree or shrub. An example of this type is the poplar leaf-stem gall which occurs on cottonwood and poplar and enlarges the stem at the base of the leaf.

Plants attacked. Most of the deciduous trees and shrubs.

Leaf Galls

Appearance. Gall formations vary on the leaves. Some are wart-like, others tube-like, some cone-like. The size of the galls varies as much as the shape. Many of the leaf galls have received common names because of their appearance.

Plants attacked. Nearly all plants are subject to leaf galls of one kind or another.

Bud Galls

Appearance. There are many deformities or galls which start from the bud. They will vary from an aborted bud to a large swelling in that area. Bud galls may form many different shapes.

Type of damage. Bud galls prevent buds from developing, or from developing normally. They sometimes affect the growth processes of the plant.

Plants attacked. Conifers, deciduous trees, and shrubs.

Branch or Trunk Galls

Appearance. These galls appear as deformities on the trunks or branches of the tree. They may affect the entire circumference or only one side. Galls may vary from a slight swelling to large lumps. Oak trees have a number of different galls in this category.

A striking condition is "witches'-broom," a condition common on hackberry. The "brooms" are actually branches of small, stunted twigs arising from an enlarged portion of the branch.

Type of damage. Some branch or trunk galls are damaging to the tree. In a few cases galls become so prominent that they are unsightly.

Plants attacked. Many of the deciduous trees and shrubs.

Cone Galls

Appearance. Cone galls appear as cone-like swellings on spruce and juniper. You have to look closely to find them, because in many cases they might be taken for normal cones at first glance.

Type of damage. Although the cone galls are not too damaging to the trees, they are unsightly and detract from the appearance of trees used as ornamentals.

Plants attacked. Spruce and juniper.

Fig. 7. Poplar leaf stem gall.

Fig. 8. Leaf gall on maple.

Fig. 9. Branch gall of oak.

Control of Gall Producers

Although galls are unsightly, seldom are the infestations of sufficient magnitude to require control measures.

Since the organisms producing galls are well protected, sprays of insecticide must be accurately timed. Another complication is that the type of organism producing the gall must be properly identified so specific control recommendations can be made.

Thus, it will be necessary to consult your county Extension agent, nurserymen, or Extension entomologist for identification and control recommendations for gall producers.

Attention

All insecticides are poisonous and should be handled accordingly. Do not smoke or eat while spraying. Follow any precautions that are listed on the labels. Wash exposed areas of the skin with soap and water following application of the insecticide. Spray materials should be stored out of the way of children and plainly marked.

In case of accidental poisoning, contact: Poison Control Center, McKennan Hospital, Sioux Falls, S.D., Telephone 605-336-3894.

The use of tradenames does not imply endorsement of one product over another.

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